Environmental Justice in the Planning Process: A Reflection on Practice in the Hong Kong-Pearl River Delta Planning Studio

By

Yadira Taylor

B.S. Environmental Policy, Analysis, and Planning
University of California, Davis, 1997

Submitted to the Department of Urban Studies and Planning in Partial Fulfillment of the Requirements for the Degree of

Master in City Planning
At the
Massachusetts Institute of Technology

June 2000

Signature of Author: ____

Department of Urban Studies and Planning
May 18, 2000

Certified by: _____

David Laws
Lecturer of Environmental Policy
Thesis Supervisor

Accepted by: _____

Paul Smoke
Associate Professor and Chair MCP, Committee

Environmental Justice in the Planning Process: A Reflection on Practice in the Hong Kong-Pearl River Delta Planning Studio

By

Yadira Taylor

Submitted to the Department of Urban Studies and Planning
On May 18, 2000 in Partial Fulfillment of the Requirements for
the Degree of Master in City Planning

ABSTRACT

Environmental justice is a set of historical claims about the inequities produced as a result of human settlement, industrial facility siting, and industrial development. It is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. In the United States, it is low-income residents and people of color who bear a disproportionate amount of these environmental and health burdens. These outcomes may be tied to tacit characteristics of planning processes that practitioners have little access to. The environmental justice movement has been focused too much on these outcomes and in reactive organizing against locally unwanted land-uses, and not enough on the processes that produced these outcomes. By observing and reflecting on practice, it is possible to determine how environmental justice problems are influenced by the internal character of planning and decision-making processes.

The Hong Kong/Pearl River Delta Planning Studio at the Department of Urban Studies and Planning at MIT is designed to prepare students for professional practice. If we learn about practice in studio, then it makes sense that the experience can also provide access to the tacit characteristics of practice that shape the way planners perceive and act on concerns about environmental justice. Through my reflections as both a participant and observer in the studio, I hope to discover what we as "planners" actually do and what are the ways that environmental justice is pre-configured in the patterns, commitments, and resources of practice. I have organized my observations into the following six categories or "moments in practice": 1) deadlines, episodes, and commitments, 2) organizational demands, 3) individual initiative and common knowledge, 4) client vision, 5) resources, and 6) project boundaries. These categories describe the major "moments" or instances during the studio that I found to be the most critical in that they presented either impediments to or opportunities for environmental justice.

Thesis Supervisor: David Laws
Title: Lecturer of Environmental Policy

We had the experience but missed the meaning.
T.S. Eliot

TABLE OF CONTENTS

ABSTRACT 2

TABLE OF CONTENTS 4

PREFACE 5
Acknowledgements 7

CHAPTER ONE: INTRODUCTION 8
Project 2022 and the Hong Kong-Pearl River Delta Planning Studio 8
My Approach: *The Reflective Turn* 10
Reflection-in-Action 12

CHAPTER TWO: THE EVOLUTION OF ENVIRONMENTAL JUSTICE 15
Early Struggles for Environmental Justice 18
Making the National Agenda—The GAO Study and the National People of Color Environmental Leadership Summit 19
The Formation of a National Movement 21
An Expanded Definition of Environmental Justice 23
Reflection in Practice—Implications for the HK-PRD Studio 27

CHAPTER THREE: SIX MOMENTS OF PRACTICE 29
Deadlines, Episodes, and Commitments 30
Organizational Demands 34
Individual Initiative and Common Knowledge 38
Resources 44
Client Vision 47
Project Boundaries 51

CHAPTER FOUR: CONCLUDING REMARKS 54
Lessons Learned 54
Lessons Others Learned 57
Drawback and Future Directions 58
Implications for Environmental Justice 59

REFERENCES 61

APPENDIX 63

A: Field Trip Itinerary

B: Seventeen Principles of Environmental Justice

PREFACE

In my first semester as a Masters student at the Department of Urban Studies and Planning, at MIT, I took the required core course of Planning and Institutional Processes. One of our last assignments for the class was the "chase-a-planner" paper. For this assignment each student in the class had to pick a practicing planner, interview and observe them in their work environment, and finally write a paper on the experience. We were expected to draw on the work of planning theorists such as John Forester, Don Schön, and Alan Altshuler, who we had read and discussed in class over the semester to reflect on the different roles and practice situations in which our planners found themselves. While I enjoyed the overall experience, by the time the assignment was completed, the term "the reflective practitioner" had become somewhat of a joke among my classmates. It happened that the class was rather "sick" of reflecting on the different roles of planners in our class discussions. Hence, it is ironic that I find myself coming full circle and completing my tenure at DUSP discussing "the reflective practitioner" as I did when I was just starting. Getting here has been long and circuitous, however.

My original thesis idea dealt with environmental justice and transportation. Although it may not be immediately obvious, transportation and environmental justice issues are irrevocably linked. Transportation affects every aspect of our lives and daily routine. It determines where we live, work, play, shop, and go to school. Whether intended or not, disparities in transportation infrastructure can hurt the community by depriving its residents of valuable resources, investments, and mobility. Environmental justice issues within the transportation context extend to disparate outcomes in planning, operation and maintenance, and infrastructure development. Despite my interest in this link between environmental justice and transportation, I still struggled to find a thesis topic. I was not satisfied, for example, with writing a thesis simply "documenting" that environmental justice exists within our transit systems.

When the opportunity was presented to me to be a part of Tunney Lee's Planning Studio and to do a thesis in conjunction with the studio, I jumped at the chance. I thought it would be a good opportunity to combine my interests of environmental justice, transportation, and international development. When discussing my thesis topic and how it

related to the Studio, I was struck that to many people, the link that I assumed to be obvious between transportation and environmental justice, wasn't. The connection between mobility and accessibility were not understood to be environmental justice problems. Although it occurred to me that this disconnect had deep implications, I was yet unclear what these implications could be. I was concerned that if "well-meaning" informed decision-makers were not aware of environmental justice, then what hope would there be to solve any of these problems. My concerns lead me to think about the importance of planning processes. More importantly, as a student, I became concerned about what it was that I was learning about this process. My participation in the planning studio presented a good opportunity to study the effects of these questions. With the help of my thesis advisor, David Laws, I developed the idea to approach the problem of environmental justice through a critical reflection on practice.

Acknowledgements

There are many people that deserve my sincerest thanks and appreciation. Without them, I don't think I could have made it this far.

First, I'd like to thank the participants of the Hong Kong/Pearl River Delta Planning Studio for letting me use them as the case study for this thesis. In addition, I'd like to give a special thank you to Tunney Lee for not only serving as a reader on my committee, but for giving me the opportunity to be a part of the studio, and for teaching me at least a little about regional planning.

David Laws, my thesis advisor, deserves special recognition for helping to guide me through this process from the early stages when I had no idea about a topic, to the final stretches and completion of the paper.

My roommate and best friend, Catherine Morris, deserves many thanks for not only providing her professional editing services, but for being supportive and understanding even when she didn't see me all that often.

I'd like to thank Ahsha A. Safai for all his love and support throughout this process, especially when I just didn't care about it anymore and for inspiring me with his enthusiasm for his thesis topic.

A big thanks go out to my other friends and colleagues—Ronald, Richard, April, Carolyn, Anyeley—for helping me to keep my sanity when we were all coming down the homestretch.

And of course, my mom, for providing me with encouragement, love, and support, and for lighting candles so that I would finish. It is because of her, that I have accomplished what I have.

For my Dad, I know somewhere
he is proud of me.

CHAPTER ONE: INTRODUCTION

PROJECT 2022 AND THE HONG KONG-PEARL RIVER DELTA PLANNING STUDIO

The Hong Kong-Pearl River Delta Region (HK/PRD) is one of the fasted growing economies of the last twenty years. Hong Kong has emerged as the world's third most important banking and financial center after London and New York, while the mainland PRD region is one of the fastest growing economies in China and has the highest per capita income and productivity in South China.[1] Despite this rapid economic growth, or perhaps as a result of it, the region is now experiencing severe problems. The problems range from environmental degradation, congestion, chaotic growth, fragmented jurisdictions, lack of planning and intra-regional coordination. The reunification of Hong Kong and China in 1997 and the creation of the "one country, two systems" philosophy places extra pressure on the region. China's imminent entry into the World Trade Organization (WTO) will only create additional uncertainties. In addition, businesspeople are confronted with stronger competition from other cities in the region like Shanghai and Singapore, and from Tokyo and London on a global scale. The region's uneven development creates an added dimension of difficulty for the prospects of regional planning efforts. Nevertheless, there is enormous potential for new directions in the development of the region—for new developments in transportation systems, settlement patterns, environmental regulation, and housing and economic development policies, among others.

[1] Yeung, 1997.

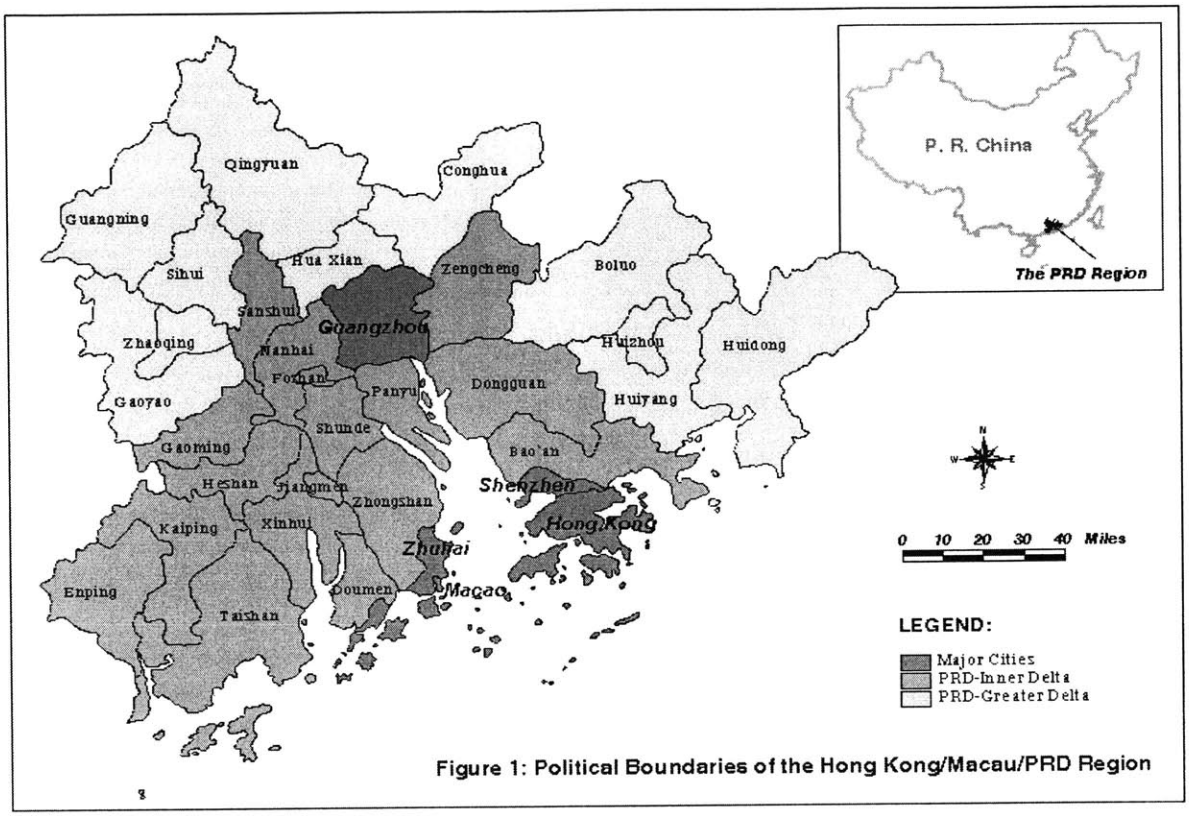


Figure 1: Political Boundaries of the Hong Kong/Macau/PRD Region

(Figure 1. Source: Prepared by Ming Zhang, *The HK/PRD Research Group MIT 1999)*

In anticipation of these tremendous problems and opportunities, a consortium of progressive Hong Kong businesspeople have organized Project 2022. The goal of the project is to develop strategies and scenarios for positioning the Pearl River Delta as a "world-class" competitive city region. The HK/PRD Planning Studio at the Department of Urban Studies and Planning at MIT was organized as part of Project 2022 to provide the research data and analysis in urban planning, the environment and infrastructure. The goal is to frame and focus the debate on how the region should develop. The final studio product is a set of scenarios for the physical development of the Hong Kong/Pearl River Delta region.

The instructors for the studio class are Professors Tunney Lee and Ralph Gakenheimer of MIT. Dr. Nien Dak Sze, founder and Chairman of Atmospheric &

Environmental Research Inc., also serves as the project coordinator for the studio. The studio participants include thirteen graduate students from the Department of Urban Studies and Planning. The studio class met for three hours twice a week during the spring term, 2000. To supplement the studio work, the studio participants took a field trip to Hong Kong and the mainland PRD in January, 2000, where they met with several planning authorities, regional business leaders, special interest groups, and local residents.

WHAT IS SCENARIO BUILDING?

Scenario building is one way of approaching difficult questions. It is a tool to help decision makers see how decisions made today will play out in an uncertain future. Scenarios provide a holistic picture of a region and force people to think comprehensively and strategically. Scenario building is a method well-suited for large-area, long-term thinking. It provides a vision of the future in order to get people thinking about current problems and the decisions that must be made now to solve these problems. Scenarios provide an easy way to inform the general public and decision makers about the links between current policymaking and future outcomes. The scenarios developed for this studio do not intend to specify or correctly predict the future, rather they aim to lay out a series of possible futures and the major forces underlying these futures. It is hoped that the scenarios produced by the participants of the MIT HK/PRD Planning Studio will aid the residents and decision makers of the Pearl River Delta in planning for the development of their region.

MY APPROACH: *THE REFLECTIVE TURN*

The HK/PRD Planning Studio, like the rest of the curriculum at the Department of Urban Studies and Planning (DUSP), is designed to prepare students for professional practice.

The intent of such a planning studio is to give students an opportunity to learn by doing in an "almost real-world setting." Students aren't "taught" but coached by a senior practitioner who helps them see "the relationships between means and methods employed and the results achieved."[2] In addition, the senior professional initiates students into the traditions of planning practice. In this way, the studio has become an important learning tool.

The studio is an initiation into what Donald Schön called the "swampy lowlands" of planning.[3] This terrain is characterized by messy, confusing problems that resist a technical solution. This swampy terrain of the lowlands tends, however, to contain many of society's most important problems. The problems confronted by the participants in the HK/PRD Planning Studio lie in this swamp. The question I want to raise in my thesis must be understood against this background of how students confront such problems and as a result, learn about their professions.

The most common answer provided to this question is that of technical rationality or the application of research-based knowledge to solving problems of instrumental choice. The "major" professions of medicine, law, and business are examples of professional practice based in technical rationality. Schön argues that technical rationality falls far short when confronted with the messy, confusing real-world problems of the "swampy lowlands." These problems contain indeterminate zones of practice where uncertainty, uniqueness, and value conflicts resist technical solution through the application of theories or techniques of choice. To address these shortcomings, Don Schön developed a new epistemology of practice based on the model of reflection-in-action.[4]

---

[2] Schön, 1985.
[3] Schön, 1983 (43).
[4] Schön, 1983.

Schön describes the *reflective turn* as a revolution[5] that offers an answer to the question—What do practitioners need to know? It helps practitioners discover what they already understand and know how to do. According to Schön, a professional practitioner is a specialist who repeatedly encounters certain types of situations through which the professional rehearses their practice. They build a set of expectations and techniques and learn what to look for and how to deal with what they find. These routines are necessary for a practitioner to function. They are a significant part of what practical professional knowledge consists of.

As professionals become more adept and specialized in their practice, they also are less open to surprise. The practice becomes repetitive and routine and the knowledge on which actions are undertaken becomes tacit, if also spontaneous. The practitioner may fail to take the time to think about what they are doing. In such situations, it is easy to fall into patterns that are difficult to access, much less correct. Reflection was posited as a way to help practitioners identify and analyze these tacit understandings, in order to rethink the situations in its uncertainty, uniqueness and value conflict.[6] While reflection-in-action can take many forms and occur in different practice settings, reflection assists practitioners in discovering what they are actually doing and, in the process, helps them to learn.

REFLECTION-IN-ACTION

My thesis applies Schön's model of reflection-in-action to the planning studio of which I am a participant. My intent is to examine how the questions of environmental justice are affected by the tacit interplay in planning practice. Environmental justice addresses the inequities created as a result of human settlement, industrial facility siting, and industrial

---

[5] Schön, 1991 (5).
[6] Schön, 1983 (61).

development. The case has been made convincingly that in the United States the low-income residents and people of color bear a disproportionate share of environmental and health burdens, yet this is only part of the picture. These outcomes may be tied to tacit characteristics of planning processes that practitioners have little access to. By observing and reflecting on practice, I will try to demonstrate how environmental justice problems are also evident in the internal character of planning and decision-making processes. My goal is to inform the design of planning processes sensitive to environmental justice. As a first step, I propose to study how current practice addresses the issue. If we learn about practice in studio, then it makes sense that the experience can also provide access to the tacit characteristics of practice that shape the way planners perceive and act on concerns about environmental justice.

In addition to Schön, my work has been guided by the examples of John Forester's reflections on the Planning and Institutional Processes (PIP) class at MIT. In his book, *Planning in the Face of Power*, and his reflections on a meeting between a city planner, developer and city officials regarding a proposed real estate project as discussed in *The Reflective Turn*. My research methodology for the reflection is as a participant-observer in the studio. Participant-observation is a blend of research methods and techniques that involves genuine social interaction in the field with the subjects of the study, direct observation, formal and informal interviewing, collection of documents and artifacts, and is often characterized by an open-endedness in the direction the study takes.[7] One strength of participant-observation that is particularly important in the studio context is that it allows for a real study of social processes and complex interdependencies in social systems. The studio is inherently a social system

[7] McCall-Simmons, 1969.

where members become initiated or socialized into the traditions of practice. Consequently, I participated in all aspects of the studio including, preliminary research, site visits, data collection and analysis, scenario development, and final product design. Additionally, my participation in the studio allows me to write on the history and overall progression of the planning process.

In Chapter Two, The Evolution of Environmental Justice, I will discuss the historical evolution of the environmental justice movement and present my argument for why a critical reflection on practice is important for environmental justice.

In Chapter Three, Six Moments of Practice, I present the six critical "moments" in practice for environmental justice.

In Chapter Four, Concluding Remarks, I present the lessons that were learned from the reflection, the lessons I think others learned in the studio, and the drawbacks and future directions for the studio. In addition, I will discussion what I have learned about the implications for environmental justice.

CHAPTER TWO: THE EVOLUTION OF ENVIRONMENTAL JUSTICE

Environmental justice (EJ) is set of historical claims about the inequities produced as a result of human settlement, industrial facility siting, and industrial development. It is defined in positive terms as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. In the United States, advocates have demonstrated that low-income residents and people of color bear a disproportionate share of environmental and health burdens. In recent years, environmental justice has received increasing attention. Along with brownfields redevelopment and smart growth, environmental justice is among the new "hot topics" in the modern environmental movement. Movies such as *Erin Brockovich* with Julia Roberts and *A Civil Action* with John Travolta suggest the resonance the problems of environmental justice have with the experience of the average citizen.

This awareness hasn't always been the case. The 1970s, has become known as the heyday of the modern environmental movement demonstrated by such events as the first Earth Day in 1970 and the passage of new ambitions environmental legislation such as the National Environmental Protection Policy Act of 1969, the Clean Air Act of 1970, Federal Water Pollution Control Act of 1972, Endangered Species Act of 1973, the Toxics Substances Control Act, the Resource Conservation and Recovery Act of 1976, and the Clean Water Act Amendments of 1977. Critics of this movement, in particular members from minority

communities, have questioned the value of environmentalism for their communities.[8] Richard Lazarus' description of environmentalism as "a deliberate attempt by a bigoted and selfish white middle-class society to perpetuate its own values and protect its own lifestyle at the expense of the poor and the underprivileged"[9] is representative of this critique. The "Group of Ten"[10]—the leading environmental organizations—have also been criticized for failing to integrate issues of race and class in their political discourse and actions.

The Environmental Protection Agency (EPA) has responded to these claims by creating the Office of Environmental Justice, which oversees the integration of environmental justice into the EPA's policies, programs, and activities. President Clinton signed Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" on February 11, 1994. The Order directs federal agencies to develop strategies to identify and address the effects of any of their policies, programs or activities that may produce disproportionately high and adverse human health or environmental effects. The Order is also intended to promote nondiscrimination in federal programs that substantially affect human health and the environment.

In the private and non-profit sector, most activity has focused on advocacy and the fight against environmentally unjust policies and decisions. Many major universities are including environmental justice into their curriculum.[11] Although the attention is recent, there have always been people who resisted actions by government and private industry that

---

[8] Lazarus, Richard. "Pursuing 'Environmental Justice': the Distributional Effects of Environmental Protection" Northwestern University Law Review, Vol. 87 (3), p. 788.
[9] Ibid.
[10] The Group of Ten include the Sierra Club, Nature Conservancy, NRDC, NWF, Wilderness Society, WWF, EDF, Izaak Walton Leauge, National Audubon Society, National Parks and Conservation Assoc.
[11] The Department of Urban Studies and Planning at The Massachusetts Institute of Technology added the course *Environmental Justice* taught by Dara O'Rourke in the Spring 2000. Cornell University offers Environment and Society by Professor Max Pfeffer, and Clark Atlanta University offers Environmental Racism by Professor Robert Bullard.

threatened the quality of life in their communities.[12] This resistance was only ignored by policymakers until recently, however.

The issues inherent in environmental justice are found in the lowland swamps of Donald Schön. They are messy and confusing, and have resisted a technical solution. In addition, given the nature of environmental justice, it is one of society's more pressing problems. As I will discuss later in this chapter, the environmental justice movement is still mainly focused on outcomes and in reactive organizing against locally unwanted land-uses (LULUs). It seems that a new approach to conceptualizing the problems and solutions of environmental justice is in order. As the mainstream environmental movement has begun the paradigm shift from environmental regulation or "end of pipe control" to pollution prevention, so should the environmental justice movement shift its paradigm. Pollution prevention is a move to look at the processes of industry or the systems of human behavior, to reduce the production of pollution and waste by changing or modifying plans, practices, or habits. An application of pollution prevention tenets requires a look at the social processes through which environmentally unjust outcomes are constructed. The social processes, in this case, are practices that result in planning policy decisions.

As I will lay out in the remainder of this chapter, the environmental justice movement is at a crossroads, which must be crossed if they want to stay effective in bringing to an end the disparate health and environmental impacts of our industrial society. The movement has been focused too much on the outcomes or "end of pipe" pollution and not enough on the processes that produced this pollution. This phenomenon can be understood by an analogy to a common environmental justice problem. Instead of concentrating on a fight against the

---

[12] Bullard, 1994.

siting of one hazardous waste facility, for example, why not look at the planning process that resulted in the decision about waste disposal in general? My concern with planning practice offers a model through which I can begin to understand the processes that have produced these environmentally unjust outcomes. A critical reflection on practice allows us to bring out the often tacit and difficult to access ways in which environmentally unjust methods are embedded in the patterns, commitments, and resources of practice. Before we can begin this critical examination of environmental justice in our planning practices, we must first understand the history and evolution of the environmental justice movement. It is important, for example, to understand the implications of the expanding definition of environmental justice. The following is a short history of the evolution of the environmental justice movement.

EARLY STRUGGLES FOR ENVIRONMENTAL JUSTICE

The struggle for environmental justice in the United States can be traced back to a 1967 campus riot at the Texas Southern University in Houston, Texas. Student protests erupted over the death of an eight-year-old African-American girl, who had drowned at a local garbage dump. These protests raised questions about why a garbage dump was located in the middle of a (mostly African-American) residential neighborhood.[13] Twelve years later in *Bean v. Southwestern Waste Management*, the first lawsuit charging environmental discrimination was filed against a sanitation company on behalf of the residents in Northwood Manor, a Houston subdivision. The residents charged Browning-Ferris Industries with discrimination for attempting to site a municipal solid waste facility in their community.

[13] Bullard, 1994 (4).

It was not until the early 1980s, however, that the environmental justice movement became national. In 1982, the movement was galvanized in Warren County, North Carolina around a protest against the siting of a hazardous waste landfill in this poor, rural, and mostly black county. The county was selected as the disposal site for 30,000 cubic yards of soil contaminated with highly toxic PCBs (polychlorinated biphenyls). Demonstrations against the siting of the landfill were organized by several national civil rights advocacy groups such as the United Church of Christ Commission for Racial Justice, the Southern Christian Leadership Conference, and the Congressional Black Caucus. Despite the incarceration of more than 500 protesters, and the fact that the landfill was eventually built, the Warren Country protests signaled the first time a minority community had mobilized a national broad-based group to fight against environmental racism.[14]

MAKING THE NATIONAL AGENDA—THE GAO STUDY AND THE NATIONAL PEOPLE OF COLOR ENVIRONMENTAL LEADERSHIP SUMMIT

Perhaps the most important outcome of the Warren County demonstrations was the 1983 United States General Accounting Office (GAO) Study of hazardous waste landfill siting in the Environmental Protection Agency's Region IV.[15] Among the protesters jailed for his participation in the demonstrations against the landfill was Walter Fauntroy. Mr. Fauntroy, the chairman of the Congressional Black Caucus and a delegate of the District of Columbia, initiated the GAO study. The study compiled cross-sectional data for census tracks surrounding four hazardous waste landfills in the region. GAO found that African-Americans

---

[14] Geiser, Ken and Gerry Waneck, "PCBs and Warren County" *Science for the People*, July-August 1983: 13-17.
[15] Bullard, 1994 (6).
Region IV includes the states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

accounted for the majority of the population surrounding three of the four facilities even though they only made up one-fifth of the region's population.[16] Although the analysis was limited to only a few case studies, the study was influential in raising both research questions and interest in the topic of environmental inequity.

Perhaps the most influential national-level study on environmental justice was conducted by the United Church of Christ's (UCC) Commission for Racial Justice in 1987. This study linked 1980 census data for zip-code level areas with then operating commercial hazardous waste treatment, storage and disposal facilities (TSDFs). The commission concluded that "race proved to be the most significant among variables tested in association with the location of commercial hazardous waste facilities" and that it represented a consistent national average.[17]

The next major milestone of the environmental justice movement occurred in October 1991 at the First National People of Color Environmental Leadership Summit in Washington D.C., where the seventeen Principles of Environmental Justice[18] were drafted. Participants at the four-day summit included more than 650 grass roots and national leaders representing more than three hundred environmental groups of color with representatives from all fifty states, as well as from Puerto Rico, Chile, Mexico, and the Marshall Islands. The Summit was proclaimed "a seminal event in the environmental justice struggle" because it helped to engender a national multiracial movement for change that many thought impossible.

These early movements were important in that they brought the issues of environmental justice "to the table." Before the GAO and UCC studies, there was no context

---

[16] Oakes, John M. et al. "A Longitudinal Analysis of Environmental Equity in Communities with Hazardous Waste Facilities" *Social Science Research*, Vol. 25 p. 127, 1996.
[17] United Church of Christ. Commission for Racial Justice, 1987 as excerpted in Oakes, et al. p 128.
[18] See Appendix B for a list of the Seventeen Principles of Environmental Justice.

through which to discuss the apparent disparate impacts of our new urban developments. These early studies had the difficult task of not only introducing the terms "environmental racism" and "environmental injustice" but they also had to convince the average person of the merits of their claims. As a result, all the early research done on environmental justice concentrated on gathering data to make the case of the mere *existence* of environmental injustice. These early advocates faced an uphill battle in their crusade to secure credibility for their arguments about environmental justice. Many decision makers and non-decision makers alike have resisted the validity of environmental justice claims. For this reason, the kind of extension in the way we think about environmental justice that I propose in this paper, is such a difficult jump from these early efforts.

THE FORMATION OF A NATIONAL MOVEMENT

After making the national agenda, a lot of new work was spawned by both the academic research community as well as grass roots community groups. Much of this work focused on documenting the occurrences of "environmental injustice" and proving or disproving the evidence of environmental inequity or disparate impact. Academic research followed the patterns of the first GAO and UCC studies, which concentrated on the siting of hazardous waste treatment, storage and disposal facilities. In 1994, for example, Goldman and Fitton[19] produced a follow-up report to the UCC study using 1990 census data, while Been in *What's fairness got to do with it? Environmental Justice and the sitting of locally undesirable land uses,*[20] evaluated several selected host communities (those communities with TSDF sites) to see if they were disproportionately minority or poor at the time the sites were selected. Another

[19] Oakes, et al., 1996, p. 128.

study by Bowen, Salling, Cyran, and Moody[21] investigated the relationship between toxic chemical emissions and demographic characteristics in Cuyahoga County, Ohio. The research tended to focus on two questions. The first dealt with causality, whether race or class is responsible for the discriminatory patterns. The second question is of the "chicken-or-egg" type—who came first: the people of color or the hazard?[22]

At the grass-roots level, activists, journalists, and academics alike continued to form alliances, coalitions, and networks in order to not only tell their stories but to begin to make change in their communities.[23] Women from the predominately Mexican-American community of East Los Angeles, California formed the Mothers of East Los Angeles (MELA) to block the construction of a state prison proposed for East L.A. and to later prevent the construction of a hazardous waste incinerator. A group in Oakland, California formed People United for a Better Oakland (PUEBLO) to address the problem of lead contamination. In 1993, Alternatives for Community and Environment (ACE) was organized in Boston, Massachusetts to supply legal and technical expertise to local communities to solve environmental problems.

Many of these groups, like MELA and PUEBLO, were first organized to block the siting of a particular unwanted land-use in the community's neighborhood. Even organizations that were not formed for the specific purpose of stopping the siting of an unwanted land use found much of their efforts spent on similar activities. ACE, for example, was successful in a well-publicized battle against an asphalt plant that wanted to locate in Roxbury, a largely minority and low-income neighborhood in Boston, Massachusetts.

---

[20] Ibid.
[21] Ibid, 129.
[22] Pulido, 1996.
[23] See Bullard 1994, a collection of essays written about the work of individuals, communities, and organizations across the U.S. fighting for environmental justice.

Community environmental justice organizations across the country found themselves mainly laboring in NIMBY and LULU[24] cases usually surrounding the construction of waste disposal or other industrial facilities. They were conducting case-by-case fighting with the hope of producing incremental change. While this approach has yielded many triumphs, many EJ organizations and activists are beginning to change their focus.

It is this change in focus that leads me to my conclusions about the importance of looking to the planning process as a method to solve the problems of environmental justice. The mission of ACE for example, is to provide legal and technical capability to local communities to help them help themselves. It serves to build capacity at the local level so that residents can be more effective participants in planning and decision-making processes.

AN EXPANDED DEFINITION OF EJ

As with most other social movements, the environmental justice movement has continued to evolve since its beginnings in the early 1980s. The most recent changes involve the movement's shifting focus and the expansion of the general conception of what environmental justice actually means. EJ advocates increasingly seek to persuade the various levels of government (federal, state, and local) to address distributive impacts, concentration, enforcement, and compliance concerns. They are moving away from organizing against an environmental harm to organizing for an environmental or social benefit. Discussing his organization's recent change in direction, Penn Loh, the Executive Director of ACE, commented, "We [community groups and EJ activists] need to be involved in the development process. We need to learn how to go out and not just say "no" to the bad, but

[24] NIMBY is the common acronym for "not in my backyard" and LULU for "locally unwanted land-uses".

to advocate for and say "yes" to the good things. We need to get people to agree on what is good and to create a vision of what a healthy community really is."[25]

Another important evolution in the EJ movement is the expansion in the conventional "definition" of environmental justice. While I do not mean to purport that there was a literal change in the definition of environmental justice, the issues and problems being considered in an environmental justice framework are expanding. From environmental justice in the workplace, to suburban sprawl, and even to genetic engineering, environmental justice is the name given to a host of problems resulting from power imbalances and political disenfranchisement.

EJ IN THE WORKPLACE

Concerns about hazardous and inhumane workplace conditions came into national prominence with the help of the Triangle Shirtwaist Company fire in a New York City sweatshop on March 25, 1911 which resulted in the death of almost 150 workers. Despite the enactment of the Occupational Health and Safety Act, which authorized the creation of the Occupational Safety and Health Administration (OSHA) to ensure "every working man and woman in the Nation safe and healthful working conditions,"[26] many safety and health problems in US workplaces have remained unaddressed.[27] Advocates in the environmental justice movement have reinvigorated the discourse on workplace conditions. They claim that workers of color and low-wage workers are far more likely than the rest of the population to

[25] Arpil 13, 2000 discussion in Dept. of Urban Studies and Planning, MIT *Environmental Leadership* class.
[26] 29 U.S.C. § 651-678.
[27] Olshansky, 1999.

work in jobs with higher and more frequent exposures to toxic chemicals and greater risk of injury.[28]

The plight of farm workers has become central to the bitter debate surrounding the use of methyl bromide, a popular soil fumigate. Methyl bromide is a highly-toxic, colorless, odorless pesticide used to kill weeds, insects, and rodents and found to cause acute damage to the central nervous system, lungs, kidneys, eyes and skin.[29] The most heavily affected by the use of the pesticide are farm workers, most of whom are undocumented laborers from Mexico and Central America. Environmental groups have joined forces with labor organizations like the United Farm Workers union to oppose not only the use of methyl bromide, but the abysmal working conditions, lack of job security and the lack of accurate reporting of the effects of pesticides on people who live and work near agricultural fields.

EJ AND TRANSPORTATION

Although it may not be immediately obvious, transportation and environmental justice issues are irrevocably linked. Transportation affects every aspect of our lives and daily routine. It determines where we live, work, play, shop, and go to school. Whether intended or not, disparities in transportation infrastructure can hurt the community by depriving its residents of valuable resources, investments, and mobility. EJ issues within the transportation context extend to disparate outcomes in planning, operation and maintenance, and infrastructure development. These disparate outcomes can be categorized into three broad groups: procedural, geographic, and social.

---

[28] Ibid.
[29] Karlinger, Morales and O'Rourke, 1997.

Procedural inequity is concerned with the transportation decision-making process and whether it is carried out in a uniform, fair, and consistent manner. Geographic inequity speaks to how transportation decisions have positive or negative distributive impacts that are geographic or spatial in scope. These transportation decisions affect the outcomes in quality of service, investment, mobility, infrastructure and facilities that disproportionately favor one geographic area over another. Social inequity concerns itself with the extent to which the burdens of transportation infrastructure disproportionately affect low-income residents and people of color. The burdens result from environmental problems like air and noise pollution, physically isolating infrastructure, the age and condition of the transit fleet, the availability and overall condition of facilities and services, the degree of accessibility to key economic and employment zones, the condition of roads, and major transportation investment projects and community economic development spillover effects.[30]

JUSTICE AND SUBURBAN SPRAWL

A relatively recent movement within the environmental justice research community is the work on sprawl and rapid urban development. Robert Bullard, Ware Professor of Sociology and director of the Environmental Justice Resource Center at Clark Atlanta University, and his colleagues Glenn Johnson and Angel Torres for example, published their work on the impacts of random, unplanned growth and its effects on economic and racial polarization in the Atlanta metropolitan region in their book, *Sprawl City: Race, Politics, and Planning in Atlanta.*[31] Community groups, like the San Francisco Bay Area's Urban Habitat Program, have also begun to organize around the issues of sprawl. The Urban Habitat

[30] Bullard and Johnson, 1997.
[31] Island Press, May 2000.

Program launched their Sprawl & Justice Project "to help build a metropolitan-wide alliance of communities of color and poor to reverse ecological damage and social injustices caused by suburban sprawl."

The Link to Planning

As these examples show, environmental justice has found its way into many different contexts—from the workplace environments of farm and factory workers, to the suburbs and inner city of sprawling Atlanta. It is no longer only concerned with the siting of unwanted industrial facilities. Instead, environmental justice is becoming more concerned with planning issues. As such, the focus of the EJ movement is moving towards the notion of process and away from discussions about outcomes. Solutions and conclusions about environmental justice are becoming more procedural and are beginning to look more like planning. The problems involved are increasingly cross-contextual and complex. Consequently, a new method of analysis is necessary. I think that a critical examination of our planning processes is one such analysis.

Reflection in Practice—Implications for the HK-PRD Studio

As I've argued in this chapter, it is time for a shift in paradigm for the environmental justice movement. It must move from a focus mainly on outcomes and in reactive organizing to a more proactive "pollution prevention" type approach. Many suggested remedies on all sides of environmental justice and related claims are for procedural remedies—more equity and involvement, or democracy expressed more directly. Yet these remedies lack a detailed critical reflection *on practice.* A critical reflection on practice can serve to answer the questions, *How have we constructed our planning process or defined the scope of the problems with respect to environmental*

justice? Are there particular barriers or tacit obligations in our practice situations that impede the incorporation of the principles of environmental justice? Or, taking the idea further, why not examine the process by which planning practitioners are taught their practice?

Schön's model of reflection-in-action is a possible technique to use in order to find answers to some of these questions. If we learn our practice in the studio, then why not reflect on just that learning to find out where "it went wrong," so to speak? By reflecting on the practice of the HK-PRD studio, I hope to provide some insight on the critical moments in practice for environmental justice. In the following chapter, I will discuss my reflections as a participant-observer in the studio and present the "six moments on practice" I found to be the most critical.

CHAPTER THREE: SIX MOMENTS IN PRACTICE

For the past five months I have played the role of both participant and observer of the MIT Hong Kong-Pearl River Delta Planning Studio. My role as an observer of the studio allowed me the opportunity to take a step back from what I was doing, reflect on our work, and to think critically about how we address environmental justice within the studio process. Through my reflections, I hope to discover what we as "planners" actually do and what are the ways in which environmental justice is pre-configured in the patterns, commitments, and resources of practice. In addition, I hope to uncover any possible tacit norms built-into our practice that raise barriers to incorporating the principles of environmental justice into our work. As a participant, I have been a "member" of the Bangkok group, the environmental sector group, scenario C, the transportation sector, and, finally the editorial group.

For this chapter, I have organized my observations into the following six categories or "moments in practice": 1) deadlines, episodes, and commitments, 2) organizational demand, 3) individual initiative and common knowledge, 4) client vision, 5) resources, and 6) project boundaries. These categories describe the major "moments" or instances during the studio that I found to be the most critical, in that they presented either impediments to or opportunities for environmental justice.

In this discussion, I have refrained from identifying participants by their names. My purpose is not to critique the actions or comments of any individual, but it is to study the overall process and "culture" of the studio environment.

DEADLINES, EPISODES, AND COMMITMENTS

Time often played a critical role in the studio process. While the lack of time often put serious constraints on our work and on the topics we pursued, it also forced us to confront deadlines that pushed our thinking and overall learning. With only three months in which to complete the scenarios and the final studio report for the Project 2022 Conference in Hong Kong, Tunney Lee was eager to get the group to work quickly. His philosophy is that any first attempt will usually be wrong, and that only by criticizing these early efforts can you begin the learning process. Therefore, for the first studio session of the semester after returning to Cambridge from the field trip, we spent little time on logistics and administrative details of the course and jumped into the scenario work. Our task was to split into groups and develop preliminary scenarios for the PRD if the status quo or worst-case situations were to happen. With "see what you can come up with" as our only direction, the studio participants formed groups and started to work. After two hours the studio assembled for a "pin-up."[32] Each group presented their work and fielded questions and comments. The group's work resulted in, short descriptions and sketches that highlighted the scenario's main characteristics.

The next few weeks of the studio followed a similar pattern. Our task was to bring definition to open mandates in incremental steps, organized by a commitment to a broad method of scenario planning. We were supplied with broad, somewhat vague directions and sent to do work—to further develop our scenarios and to collect data—and would later reconvene for a pin-up. These became a series of episodes that would start fresh every

[32] A pin-up is when all participants in the studio gather and students actually pin-up and present the text, charts, or sketches they have been working on. The pin-up allows studio participants to share, comment on, and discus each other's work.

session, or two. During these early weeks, our sessions occasionally consisted of lectures on various substantive topics related to the studio work. The first was a lecture by Ralph Gakenheimer describing the scenario planning method he helped to develop as part of a project with the MIT Cooperative Mobility Program. Others were on air quality with Dr. Dak Sze and by Professor Fred Salvucci on transportation planning. In order to help us think about what kinds of "futures" were possible for the region, the question, "What would this region look like if it followed the development model of Singapore, Tokyo, Bangkok, or Boston-New England[33]?" was posed to the group. We split into four groups and used the various "models" as an endpoint or vision of how the HK-PRD would look in 2022 and tried to determine what decisions or policies would have to be implemented to get there.

After a week or two, when it became obvious that the groups couldn't develop their scenarios in greater detail, we reorganized into "sector" groups to attempt to flesh the scenarios out by the sectors of environment, land use and settlement patterns, transportation, and economic development. Our work alternated with periods of trial and error and sessions when we, in our small sector groups, attempted to figure out what we were supposed to do and devise a plan to get there. Much of the time, we felt confused. We had trouble focusing on the task and establishing how it related to the overall problems and issues in the region. Much time and effort was spent deliberating and discussing our assumptions, ideas, and arguments. The problem itself was open, and so we began without a clear plan of action and a clear need for concrete "products." We had no tables of numbers or projections, no maps

[33] Although actually named the "The Emerging Metropolitan Scenario" it was based on the Boston-New England region. This model is characterized by multiple administrative entities who have policy autonomy but nevertheless coordinate on a limited set of issues of common interest, e.g. the MBTA or MDC.

drawn, or no text written. The most influencing factor in terms of studio direction, however, would soon show itself in the image of the studio midterm presentation.

The group faced a sudden deadline that forced action, and with it commitments. Late in March, we learned that the studio's main funder would be in town in a couple weeks and that we would give him and the department a presentation of our work to date. After calming down from the panic the news initially induced, we quickly reorganized, yet again, and set to work. Recognizing that the group still lacked direction, the studio Teaching Assistant responded by creating a structured format for the scenario development, as well as preliminary descriptions of the three new scenarios.[34] This new format was rooted in the scenario method devised by the MIT Cooperative Mobility program. Since time was limited, the group adopted this format with almost no discussion, even though it was a complete change in direction. We were "stuck" and simply desired some clarity and direction. Although the new format provided the needed direction, it also forced us to abandon some of our previous work. Much of what we were slowly struggling and deliberating over were the issues central to the principles of environmental justice. We were attempting to make sense of complex cause and effect relationships. *Which model, the Bangkok or Tokyo, would result in improved mobility for which people? How does the increase in rural to urban migration affect housing or employment equity within the region? How should Hong Kong and China cooperate in regards to hazardous waste disposal?* Occasionally, these discussions were cut short because we needed to get our work done. In short, we were trapped in the thick and murky waters of Donald Schön's swamp. A swamp filled with ambiguity that made us feel uncomfortable. We grabbed onto this new organizational structure in order to "pull us out of the swamp." Unfortunately, this same

[34] Please refer to the organizational demands section in this chapter for a more in depth discussion of Ming Zhang's scenario development methodology.

desire for clarity simultaneously drives out complexity and relevance. We sacrificed one for the other so that we could generate some form of "products" for our presentation. Additionally, as a result of the time constraint, we concentrated on the most readily available information, which was often not the most significant or important. I will discuss this last point in greater detail in the "Resources" section of this chapter.

One benefit of the mini-deadlines or pin-up sessions was that they were episodes of good learning experiences. We pushed our thinking and ideas during these sessions. We'd discuss how to approach the different problems in the region, how the various outcomes would change given different interventions and how to think about the different planning issues. Even if a topic was not completely discussed during class time, the discussion might continue outside class in an informal setting. The discussions were continued in our small groups or even one on one among students. I'd often spend time individually reflecting on the conversations and their implications for our studio work. It was in these outside discussions that some of us from the studio would talk a lot about justice. We talked about how we saw it, how to fit it in to our work and what it meant for the people of the Pearl River Delta. We worked through the problem incrementally, a little every session.

Although the episodic character of the studio has important implications for learning, it also forces us to make commitments which are difficult to back down from. The pin-up sessions provided an environment in which to bring closure to our thinking. It is through closure that we can develop. Yet, closure involves commitments whose significance may only later become clear. Often, the pin-up would focus on a particular idea or topic. For the next session, it would therefore become difficult to move onto a new idea. Certain topics within the scenarios were so common, that they became rhetoric. By the end of the semester, it felt

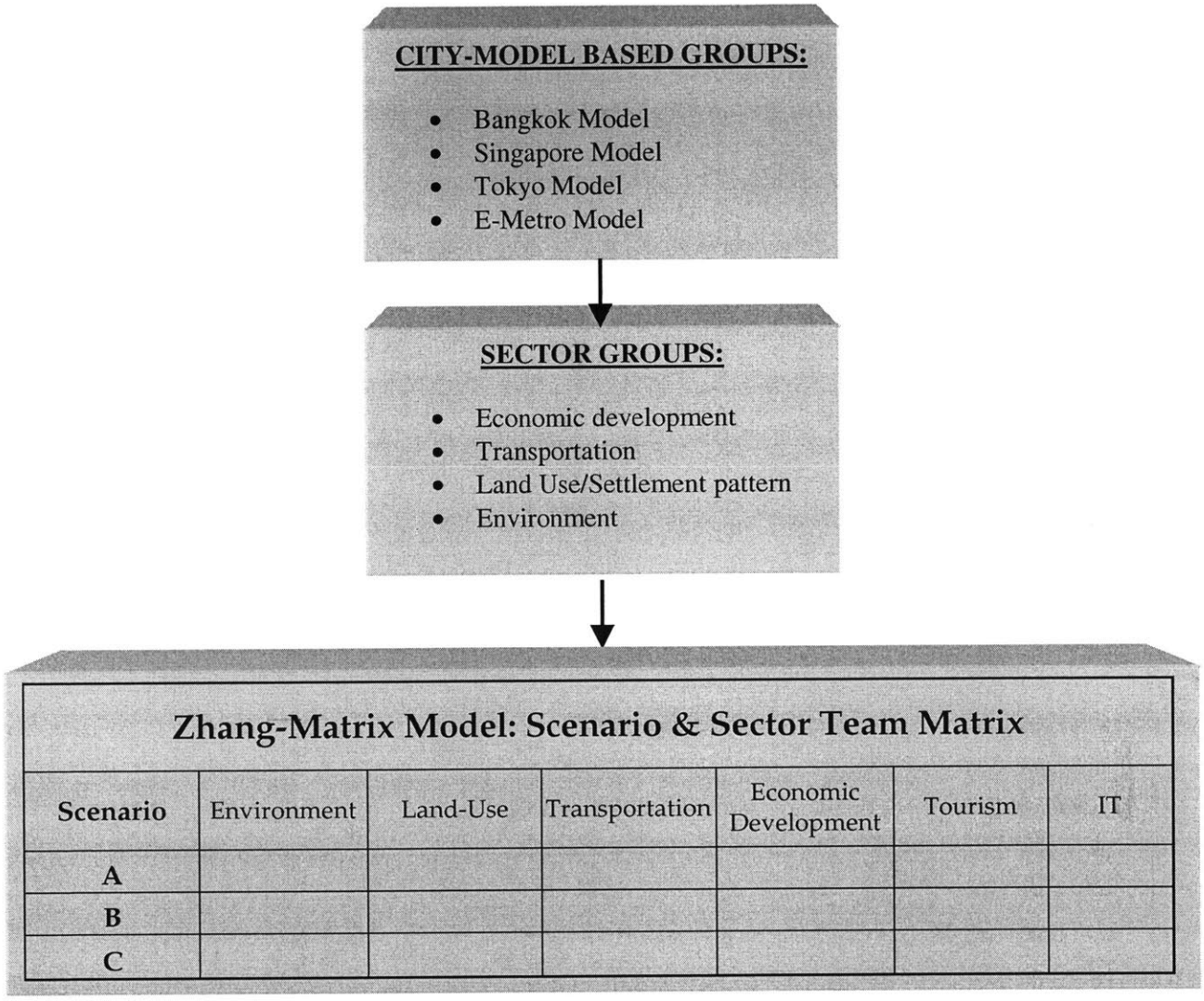
like we stopped critically thinking and just turned to repeating the same rhetoric about each of the scenarios. Thereby dampening our ability to consider new ideas and connections.

ORGANIZATIONAL DEMANDS

The organizational structure of the studio had profound effects on the final outcomes and on the issues that were considered. As was previously described in the *deadlines, episodes, and commitments* section, the studio went through several reorganizations over the course of the semester. The first reorganization was into city-model based groups. After spending a couple weeks working on these scenarios, the studio re-formed into "sector" groups in order to examine the scenarios further by topic. Except for slight variation, these sector groups would also stay constant for our final reorganization, which I will call the "Zhang-Matrix Model." As mentioned previously, the Zhang-Matrix model was largely developed by our teaching assistant, Ming Zhang, following the format developed by the MIT Cooperative Mobility program. The reasoning behind the scenario and sector team matrix was that every scenario team would also have at least one member from each sector group. In this manner, the work done in the sectors could easily be incorporated into the scenarios and vice versa. As a result, this matrix organization model creates dual commitments for each studio participant. The matrix is reproduced in Figure 2.

The resultant effect of breaking down into the sector groups is that the scenarios contain in-depth discussions on the topics of the environment, economic development, transportation infrastructure and land-use characteristics, and not much else. While I do not want to focus my argument on what topics were not covered and why, I think it is important to investigate what effect the sector grouping had with respect to environmental justice.

Figure 2: Evolution of the studio's organizational structure



Environmental justice is a complex issue that bridges many different subject areas, such as social equity, public health, environmental regulation, and public policy. Therefore, it seems necessary to tackle the issue with an interdisciplinary perspective that draws from all subject areas. It is necessary to make the connections between policy decisions on the one hand and the effects of these decisions on the other. By splitting into sector groups, however, we created artificial boundaries that became real and inhibited the kind of interdisciplinary

perspective necessary for environmental justice. The effects of these boundaries became apparent during an environmental sector meeting of which I was a part. The group's task was to detail the various possible effects of poor planning decisions on the environmental quality of the Pearl River Delta region. Starting with urban sprawl, we first described the impacts of sprawl on land-use decisions, then auto-dependence, then finally made the link to air quality. After about an hour of work, we decided to abandon the idea because we thought we crossed over into the territory of the transportation and land-use group. We feared that this work would be too similar to other groups' work and that we were "wasting" time. As a result, we may have missed good opportunities to discover important linkages between sectors or subject areas. Our allegiance to organizational commitments impeded our ability to understand cross-cutting relevance. It is in understanding these linkages that we can learn more about the cause and effect relationships essential to environmental justice.

One interesting characteristic of this studio is the predominance of participants—including myself—also writing their theses in conjunction with the class. The scheme behind the studio-based theses is an experiment within DUSP to test the applicability of more project-based theses. For the studio part, the hope is that the thesis writers will become the "experts" on the topic on which they are writing their thesis. Thus, the thesis, therefore, is supposed to inform the studio with an in-depth examination of some topic related to the PRD. The result of this set-up, was the organization and separation of studio participants into the sector groups. The water quality thesis writer is a member of the environmental group, the student writing on investment capital in Hong Kong is a member of the economic development group, the student concerned with urban densities headed the land-use and human settlement group, and the transportation related thesis writer is a member of the transportation group. My concern with this situation is that if all the thesis writers are focused

on their own topic, then they will not be able to bridge across sectors to consider the outcomes of issues that do not fit nicely into the sector groupings. One student commented to me that she thought that the thesis "pigeon-holed" people. Using herself as an example, she described how because she was so swamped with work, she often didn't read the many background and PRD-related emails that were sent out to the group if the subject didn't immediately pertain to her topic. This situation is of great concern if you want to get people thinking outside of their "box."

In fact, a common observation among studio participants is that it is difficult to separate the transportation and land-use group. They feel that because their topics are so interrelated, they can't analyze them separately. "It isn't efficient to discuss settlement patterns in the absence of transportation policy," commented one student. Another expressed her concerns that "our process is too piecemeal and disjointed," and that "it isn't a good idea to separate settlement patterns from the environment." One analogy to this dilemma is the situation where a group of friends are working on a large puzzle. Each friend chooses to work on a separate corner of the puzzle. In the process, they become so consumed with finishing their section of the puzzle, that nobody takes the time to step back and notice the missing puzzle piece under the table.

In addition to these drawbacks of breaking into groups, there are also some benefits. With such a large and complex system, like the PRDs, it is difficult to make sense of one's task without breaking it down into smaller pieces. The main reason for organizing ourselves into the various groups and committees was to make it easier to get a grasp of the issues so that we could start developing the scenarios. In this respect, it seems that the "Zhang-Matrix-model" can simultaneously accomplish both goals. It is a necessary evil that both enables and hinders the development of constructive scenarios.

The most difficult problem to overcome, however, is that once the decision to structure the organization a certain way is made, it is very difficult to go back and change it. You get tied to the choices made based on your value-commitments. If the process has worked so far, why change it? A tension arises between the two conflicting imperatives of the method. On the one hand the complexity of the problems necessitates a narrowing of the scope into "sector" groups, and on the other, a more holistic approach is required. This tension was apparent throughout our studio process. Even during our final studio presentation, our reviewers debated among themselves on which approach (the sector vs. the scenario) made for a better presentation. Nevertheless, it is important to understand that every practice situation will demand some sort of organizational structure. The challenge, however, is to deal with the blind spots that the organizational structure creates.

INDIVIDUAL INITIATIVE AND COMMON KNOWLEDGE

Although I had heard the stories from students in Tunney Lee's previous planning studio the year before on the City of Chelsea, I still wasn't quite prepared for the experience when it became my turn. Unlike many other courses at DUSP, Tunney's studios depend a lot on the initiative of individual students. Little concrete direction is given in favor of nurturing an atmosphere that is conducive to producing individual interest and creativity. One is encouraged to take an active role in shaping the direction of the studio process. If you have an idea or a particular interest that you would like to look into, there really isn't anything, but your own initiative stopping you. As a result, one of the driving forces for much of the studio work is the interests and knowledge of the participants in the studio.

As a result, the students often self-organize into groups ordered by topics of interest. These topics and rough groupings became evident even on the first day during our first

session of studio. The task for the first day was to split into groups and develop preliminary scenarios for the PRD if the status quo or worst-case situations were to occur. In the pin-up session that followed this work, we got a snapshot of everyone's interests and focus for the rest of the semester. Some people quickly focused their mini-scenarios on land-use and transportation, others talked only about economic development policy, and my group focused on environmental quality and socio-economic factors.

While working in this type of environment can at times be very exciting and rewarding, there are some drawbacks. Aside from the occasional feelings of frustration, especially for those who like to work in a more structured environment, there is the possibility that the group will overlook something important. If everyone is following their own interests and nobody is also looking at the sum of the total product, then important issues may not be covered. With respect to environmental justice, for example, unless there is a member of the group particularly interested or knowledgeable on the topic, it can easily fall through the cracks. In the case of the studio, there were occasions when if I didn't take responsibility for certain tasks, they probably would not get done. This was not due to lack of interest on the part of students, but to the fact that we were already fairly busy with other duties.

Towards the end of the semester when the editorial committee (the group charged with editing the final report document) conducted an inventory of everyone's assignments for the final report, we discovered that the final analysis for the demographics section was still missing. The demographics section was included in the scenario report in the final hours of the studio to mainly describe the social characteristics of the region in each scenario. This section includes not only demographic information, but information on income distribution, educational attainment, and health and sanitation standards, among other characteristics. Someone in the meeting suggested that we just leave out the demographic section altogether

since we were already so behind. To prevent us from leaving out some potentially important information, I volunteered to complete the section for the group. These "quality of life" and social characteristic indicators are necessary inclusions into any planning analysis. While these characteristics do not completely address the issues of environmental justice, they are (as of yet) the best available information for these purposes.

Perhaps the real problem in this instance is that of collective action. How do you get people to do what you want them to do? How do you ensure that every important issue gets adequate attention, while simultaneously creating a spontaneous and non-stifling environment for creativity? One solution is to develop a set of specific questions that must be worked through by the end of the planning process. The questions could focus the work so that a thorough understanding of the causes and impacts of every decision or policy option is carefully considered. It is not clear, however, that this approach is fundamentally different than the approach we took for the studio. Such a solution might also help solve the problem that the person who first brings up a new issue is also left to find the resources needed to deal with that new issue. I encountered this problem during the studio with the social demographic characteristics. Because I was the person to push for their inclusion, I also had to do the research work to find the necessary data.

I think another important barrier I encountered was a general lack of knowledge or experience in dealing with the issues of environmental justice. This lack of knowledge or experience can be tied to the ways people learn their practice. There is a certain amount of inertia in practice. It is not easy to get new input or change the way things have "always been done." In this way practice can become habitual. Practitioners may not only fail to *see* new problems, they will lose the ability to *listen* for new problems. The current methods or data used most likely reflect prior value-commitments embedded in the daily practice. The

importance of encountering a new perspective on an old practice is that it helps the practitioner to become surprised. According to Schön, "much reflection-in-action hinges on the experience of surprise."[35] When our daily practice situations yield nothing more than the results expected for it, we tend not to think about it. But when we are surprised by an unexpected outcome, action, or situation, we may respond with reflection-in-action. It is through these moments of reflection that we learn more from our professional practices. A continued ability to be surprised, however, is hard to sustain.

Even with practitioners committed to the values, and a work environment supportive of individual initiative, our studio still struggled with the problems associated with the inertia in practice. There is no precedent or developed framework explaining how to talk about environmental justice. No common vocabulary or set of environmental justice measures exists, for example. Within the field of mainstream environmental policy, in contrast, there exists a base of common knowledge, a common vocabulary, certain frameworks and norms, as well as a common set of environmental quality measures and indicators. A discussion of the environmental state of a particular region, for example, would not be complete without, at minimum, an evaluation of the region's air, water, and natural resources. A study of the region's air quality would include an analysis of both stationary and mobile sources and would most likely be measured in terms of particulate level, SO_2, NOX, CO, Ozone, etc. We could develop well documented arguments on both the benefits and drawbacks of implementing various policy interventions, like the use of scrubbers on industrial air stacks, the implementation of tradable permits, or the use of demand management policies to reduce private auto use. There is roughly thirty or more years of experience and work in the field of

[35] Schön, 1993 (56).

environmental policy, protection, and management. Environmental justice, as a field, is so new that it hasn't had the opportunity to completely develop its "body of knowledge."

This problem is illustrated in the following example. In about the middle of the semester, during one of the studio's many pin-up sessions and follow-up discussions, one student, from the economic development sector group, brought up the topic of income distribution. She described an article she had just read about the increasing gap in income distribution in the PRD. She posed to the group the question of whether the studio should tackle this issue of income distribution within our scenario reports. She expressed her opinion that it was an interesting and important consideration, but that she was concerned about it since we hadn't yet explicitly brought up income distribution before.

After a short discussion of the merits of income distribution, the issue was dropped and the focus of the conversation shifted to address a question from another student. I think that the problem that the group faced was that we weren't quite sure how to go about incorporating income distribution into the scenarios. The first problem is how to actually quantify income distribution. One method is by the Gini Coefficient;[36] however, as I soon found out, there are conflicting reports on China's Gini Coefficient, and no data specific to the PRD or even for the Guangdong province. The next problem is that once a good projection for the current income distribution is made, we can only speculate how income distribution will look in each of the scenarios. During the rest of the semester, the idea of incorporating income distribution in the scenarios surfaced a few more times, but these discussions always suffered the same fate.

[36] The Gini coefficient is a numerical measurement of income distribution. It can be expressed as a proportion or a percentage. The Gini coefficient will be to 0 when income distribution is completely equal and equal to 1 or 100% when it is completely unequal (the total income in a population accrues to only one person or household).

My purpose for highlighting the studio's struggles over income distribution might seem out of place in a discussion about environmental justice. While income distribution is not a proxy for environmental justice per se, it is important when considering social justice. In fact, this very issue was encountered by the early efforts of the EJ movement, like the GAO and UCC studies. In one 1994 study for example, the authors used 1990 census data to evaluate if selected communities with TSDF sites were disproportionately minority or poor at the time the sites were selected. In order to begin thinking about disparate impacts, you must first discover if there are significant differences between populations—income distribution is only one such measure. As such, for the purposes of my analysis, I view the discussion of income distribution as important as if the topic of environmental justice were discussed explicitly.

I found the most significant aspect of the previous incident in studio, however, to be not the fact that the issue was brought up at all, but the manner in that the question was asked. The student's tone and demeanor seemed hesitant and lacking confidence. The incidence prompted me to think about professionalism and the importance of perceived credibility. While there is currently a growing community of environmental justice advocates, there are no professionally trained environmental justice experts. One cannot graduate from a University with a degree or even a specialization in environmental justice. I do not want to minimize, however, the efforts and contributions of pioneers in the field, such as Robert Bullard, who may well be the closest thing to an "environmental justice expert" that there is. My point is that environmental justice, as a "field," has yet to achieve complete credibility among the general public. Without this credibility, or so-called "professionalism," people will likely continue to be hesitant to focus or even discuss environmental justice within their practice.

RESOURCES

One of the most pervasive obstacles for the studio work has been that of data collection. As one might assume that locating good quality data for the mainland China side of the PRD is difficult. It was often our experience that we'd find good data for Hong Kong, but couldn't find complementary data for China. Even with the help of Tunney and Dr. Sze (with their contacts in Hong Kong), we still had trouble finding data for some of the interesting variables we wanted to discuss. While it was relatively easy to find Gross Domestic Product (GDP) and population numbers for our projections, for example, it was difficult to find numbers for the Gini coefficient projections. Basic environmental data on water quality was another difficult area. The trouble for much of the information available for China was that it wasn't specific to our region. Information might be at the country or even provincial level and not specific to the PRD, a region considerably different than much of the rest of China. As a result, it was hard to address questions about distribution, making it difficult to even scratch the surface of social injustices. To cope with the problem, we simply did the best we could with what was available. The dearth of data not only limited the scope of our research, but it also significantly influenced the direction of our analysis.

Since we had no choice but to use whatever data was available, our scenario projections often focused on subjects that we didn't necessarily want to highlight. For example, in our haste to produce a meaningful presentation for the mid-term review, we incorporated any data that was available, without thinking too deeply about the merits of the data or the points it highlighted. One member of my scenario team is especially adept at creating particularly "attractive" graphs and charts. As a result, the audience's attention was drawn to the graphs, even though they weren't particularly important. This problem is

perhaps better attributed to the flaws in the design of our presentation and not simply a problem of inadequate information. Nevertheless, it seemed that we were heading in the direction of where the good data was, and not necessarily where we wanted to take the scenario. We focused on average GRP (gross regional product) growth, for example, instead of on income distribution or the proportional increase in the region's rural to urban migrant workforce.

One of the challenges we faced as a studio was that not many of the student participants had much background or prior knowledge of Hong Kong, the Pearl River Delta, or even China. To help familiarize the student participants with the region and its particular challenges and issues, the studio visited China and the SAR for a two week field trip during the January "Independent Activities Period" (Appendix A).[37] During this field trip we toured the major cities, met with city and planning officials, visited an electronics factory, textile factory, and toy manufacturing facility, and met with university researchers and practitioners. This experience formed the base for much of our knowledge about the region. To supplement this base, after returning to MIT the studio met with various experts. These experts either supplied us with additional background information on the region or gave us insight into a particular topic. Fred Salvucci, Professor in the Center for Transportation Studies at MIT, for example, discussed with us his thoughts on auto-dependency and its social and political implications. Dr. Sze gave an overview of air quality issues, tradeable permits and their opportunities and limitations for use in the PRD. In addition to our discussion with Mr Fung, we met with another project sponsor and owner of the Esquel textile factory located in Gaoming, PRD.

[37] Please see appendix A for a more detailed description of the field trip itinerary.

Because "who you talk to" influences a lot about what you think about an issue or a place, it is important to reflect on the mix and character of your key informants, in the chance that you are getting a skewed or biased picture of the issue at hand. This reflection can help us reach an understanding about the value-commitments that originally produced the schedule of speakers and contacts. One incident that I found interesting during the field trip occurred in our meeting with professors and graduate students at the planning department at Zhongshan University in Guangzhou. Towards the end of the meeting I asked the Chinese professors and students what they considered to be the PRD's most pressing problem in the near term. I do not recollect very well what answers the professors offered, but I had an interesting conversation with one of the students after the meeting. Once the meeting adjourned, the student approached me to say that what she saw as the region's biggest challenge was a growing social inequality, especially with respect to a quickly growing aging population. I regret not having the opportunity to speak with her at greater length. I've since wondered why she waited until after the meeting to communicate her opinions—whether we just simply ran out of time or if there was another deeper reason.

Another person with whom I wish the studio could have had greater contact with is Dara O'Rouke, another MIT professor at DUSP. It would have been interesting to have a session similar to the one with Professor Salvucci where Professor O'Rouke discussed his work on the working and environmental conditions in the manufacturing industry in Asia. Such a discussion, for example, could have provided the studio with a different perspective.

As previously discussed in the *individual initiative and common knowledge* section, one of the biggest challenges for environmental justice is that there is no common "body of knowledge" or well-established set of environmental justice measures. Moreover, it is still unclear what data is even necessary to talk intelligently about the issue. No one has yet

developed an "environmental justice index," for example, that measures the extent to which policy decisions produce disparate impacts on a particular segment of the population. At this point, however, we lack information on even common social characteristics like local income levels, employment patterns or opportunities for women, the state of working conditions, or public health statistics at the local level. Without such information, it makes it much more difficult to build (and support) an argument about a region's social and environmental injustices.

One important lesson I learned about practice from my experiences in the studio is that you will never have enough data. Perfect information, as economists like to assume, is simply a luxury not often found in "real-work" settings. What it comes down to is how good a guesser you are. Tunney Lee often commented that "with experience you actually become quite good at guessing." Even if adequate information is available, you then face the challenge of figuring out what to do with all the data once you get it. Sometimes too much data can also become a problem in that because there is just so much information to analyze, you become paralyzed. What is needed in such a circumstance is a model to tie it all together. Environmental justice, for example, could benefit from a framework that ties the apparent disparate distributional outcomes to particular policy decisions and interventions.

CLIENT VISION

Most, if not all, planning processes have to juggle the interests of the project stakeholders. The stakeholders may be the community, the client, the main funder, your boss, industry, an NGO,[38] a government agency, or any combination of these. Perhaps the most

[38] Non-governmental organization.

important stakeholder in any planning process is the project client. Every planning exercise has a client, even if it is oneself. As such, it is important to understand the client's interests and motivations. The planner must decide for whom are they planning and whose interests are the most important to consider. This decision can become more complicated when one of the principle stakeholders, your client, is also funding the project, as is the case for the studio. How much autonomy is actually possible in such a situation? To what extent does one have complete intellectual freedom? These questions become particularly interesting given that the studio is principally an academic exercise, and presumed to be free from outside influences. In fact, the studio is not free from this influence given that the studio's client is also the project's sponsor.

The project's sponsors are a consortium of Hong Kong businesspeople and leaders concerned about the future of Hong Kong and the Pearl River Delta. Leading this group is Victor Fung, a well-known business leader and chairman of Hong Kong's Trade Development Council and the Airport Authority. No matter how progressive, forward-thinking, or munificent Victor Fung may be, he is still a businessman with a particular stake in the future of the region and whose vision is leading the direction of this project. During the studio, especially at the beginning of the semester, the students often wrestled with this issue of client vision.

Who were we planning for? Whose perspective should be considered when evaluating various policies or strategic decisions? How would Victor Fung respond to our work? Despite the fact that these questions were always in the back of our minds, we finally chose to take a relatively broad perspective not tied to any particular stakeholder. We focused on regionalism and the extent to which each scenario supported or resisted intra-regional cooperation. We tried to consider the region as a single entity, while simultaneously acknowledging the differences between

Hong Kong and the Mainland. In fact, we focused more on the Mainland PRD than we did on Hong Kong. China's greater potential for new directions in development and decision-making generated more interest than Hong Kong's. The impacts of new policy decisions, like automobile policy or environmental enforcement, promise to be much greater in the mainland PRD.

We had the opportunity of meeting with Fung for the second time during the studio mid-term presentation. We first met many of our project sponsors in Hong Kong during the field trip. The purpose of the mid-term presentation was to give Fung an update and to receive feedback from him on the studio work to date. Many of us, including myself, were impressed by Fung's knowledge, intelligence, and uncompromising hope for Hong Kong. Nevertheless, one of his comments compelled me to think about how his influence was shaping our work. He suggested that we put ourselves "in the shoes of one of the protagonists, like a Hong Kong businessman, and consider the use of game theory. . . in order to maximize the utility functions of the protagonist."[39] He argued that we needed to "sell" our ideas to the average Hong Kong businessperson so that they would "buy into" the idea that actions must be taken now to ensure the best possible future for Hong Kong and the rest of the PRD. In essence, he wanted to formulate a marketing and public relations strategy for the presentation of the studio's scenarios. So if your goal is to convince a group of businesspeople to change their actions, it makes sense to use economic theory as the base for your arguments. But when your concern is a sound planning process that incorporates environmental justice, the use of economic theory is simply not adequate.

[39] Game theory is a branch of applied mathematics used by economists to analyze the strategies used by decision-makers to anticipate the reasoning (and actions) of other decision makers in situations where there is an interplay between parties that may have similar, opposed, or mixed interests.

While we did not take the suggestion to use game theory or utility functions, one way Fung's influence is apparent is in our language and focus on the competitiveness of the region. For the conclusions section in the final studio report, for example, we summarize the scenarios by describing the PRD's global competitiveness in each scenario. We link the effects of environmental, transportation, economic, and land-use policy with the relative competitiveness of the region. The benefit of framing our arguments into a discussion about regional competitiveness is that it serves as a good "marketing" tool. During the mid-term presentation, Fung emphasized the importance of marketing as a method to encourage decision makers to think about current problems and the decisions that must be made now to solve these problems. However, if the decision makers are convinced and propelled into action by an argument about alternative futures and relative projected competitiveness, then what is the problem? By summarizing all the region's policies into how they affect only economic competitiveness, you are overlooking many other important policy outcomes, like quality of life, social justice, or even environmental justice.

A particular scenario or policy decision, for example, might be beneficial to economic competitiveness, but may at the same time produce an inequitable outcome. The abundance of "cheap labor" may give China a particular advantage in certain industries, however, it says nothing about the working conditions of the average factory. The construction of a new superhighway or deep water port may say a lot about the level of development in a certain region, but it doesn't tell you anything about the quality of public transportation or the mobility options for the average citizen. There seems to be a tradeoff between a good "marketing" strategy and a more thorough analysis of the issues, policies, and their impacts. It is during this "tradeoff" point wherein lies the "critical moment" for environmental justice.

It is conceivable that a tradeoff need not be made. As planners, we have the opportunity to first study and then impart what we have learned about the impacts and consequences of society's development policies. But the real challenge is to take advantage of this opportunity even within the constraints of client/stakeholder relationships. Why keep quality of life indicators secondary to economic development or global competitiveness factors? The whole argument surrounding environmental justice is to get individuals thinking deeper about the consequences of their development and policy decisions. By considering only the economic impacts, it will be impossible to progress to a more environmentally just society. One of the root causes of environmental injustice is the power imbalance between people in society. One remedy to equalize these imbalances is to clearly communicate all the relevant impacts of policy decisions. Furthermore, a good practitioner can use the planning process as a good opportunity to influence their client. There is a certain amount of interaction that can evolve between the planner and the client. The challenge is to make your client aware of the important impacts without compromising this information at the stake of your "marketing" strategy.

PROJECT BOUNDARIES

In essence, environmental justice is an issue that is very local in nature. It is concerned with how local people, especially the relatively powerless or disenfranchised, are affected by development decisions. Environmental justice hopes to answer the following questions: *How does the placement of a landfill or incinerator affect the community that resides directly adjacent to this type of site? How does poor transportation infrastructure in a neighborhood affect the ability of people living in that neighborhood to access employment centers? What are the affects of pesticide use on the workers at a particular farm? How does city housing provision affect the living conditions of garment workers in Gaoming, a small city*

in the PRD? With these types of questions, I would think that a fairly narrow scope is necessary to even begin to understand the issues, let alone to formulate adequate solutions. In the transportation example above, I imagine that to answer the question you would at least need to understand what are the residents' current modes of transport, their demographics, employment characteristics for the neighborhood and city, educational levels, and the location of current and new job centers. In the Gaoming example, you would need fairly detailed accounts of housing conditions and needs from the workers in that city, as well as detailed information about the housing stock in the area. If such a narrow scope is needed, then what are the implications for our studio practice?

The scope of the studio is to plan for a region the size of the New York metropolitan area with two to three times the population. Hong Kong alone has a population of 6.7 million and an area of 1100 square kilometers. The Pearl River Delta is made up of over nineteen separate administrative districts including the Special Economic Zones of Shenzhen and Zhuhai. Given a planning process that is so comprehensive in nature, is it possible to adequately take into account the local perspective? Is it even feasible to consider issues like environmental justice? Since one of the goals of the project is to get residents of the Pearl River Delta to think more regionally, almost everything we consider in studio is put into the context of regionalism. When thinking so broadly, to what extent are we—the studio participants—considering how our strategic decisions affect particular communities? I think that this issue has been the most difficult to tackle. On one hand, I am trying to paint a broad descriptive picture about a disjointed, unconnected region in turmoil, and, on the other hand, I'm also concerned with highlighting the effects of economic policy on income distribution and the working conditions of young female factory workers. It is difficult to simultaneously

think both locally and comprehensively. Yet, I think it is precisely necessary for environmental justice.

During the mid-term presentation to members of the Department of Urban Studies and Planning, we received one piece of advice for our studio on the issue of scope. Their suggestion was that the studio should focus only on a few key points—or strategic decisions—instead of attempting to be so comprehensive. The argument was that in the limited time for the project, it might be more valuable for our clients if we concentrated on a few strategic decisions or policy interventions in depth, rather than on a greater number in presumably less detail. This suggestion was interesting in that it carries deep implications for the quality of work in a planning process or project.

It is important to remember, however, that there is always a problem depending on where the boundaries are drawn in any planning process. If the scope is too broad, then it is difficult to adequately understand the local picture. But if the scope is too narrow, it is easy to miss something important. The challenge of environmental justice is that it doesn't just imply one scale. There are policy actors affecting environmental and development outcomes at both the national and local level. In addition, different environmental justice problems become apparent depending on the different scales in which you view the problem. At a regional scale, for example, it is possible to study the degree to which a region's infrastructure allows for affordable and accessible regional mobility. While at a more local scale, it is possible to understand how the construction of a new expressway affects the particular neighborhood through which the expressway is built.

Chapter Four: Concluding Remarks

In this thesis I present the findings of my reflections on the Hong Kong-Pearl River Delta Planning Studio. The purpose of this critical reflection on practice is to examine the ways environmental justice is pre-configured in the patterns, commitments, and resources of practice. I collected my reflections into six categories, or "moments of practice." As Clandinin and Connelly concluded in their case study in Schön's *The Reflective Turn*, "reflections of practice are never finally closed by the conclusion of a case study." [40] I think that they meant that one can never stop learning from their own experiences, if you take the time to stop, and look at what you are actually doing. The learning, therefore, should never stop until you stop practicing. In this chapter, I will conclude by presenting the lessons that I learned from this process of reflection, the lessons I think others learned in the studio, and the aspects I would like to have done differently. I will close with a discussion from what I have learned about the implications for environmental justice.

LESSONS LEARNED

The following is a description of the lessons I learned as both a participant and observer of the HK/PRD studio.

Most of my learning came during writing.

I was surprised to find that the majority of my actual "learning" came in the process of writing about my reflections. Before this process of writing, I thought that I had "reflected."

[40] From "Narrative and Story in Practice and Research," Schön, 1991.

However, it wasn't until I started to write about my reflections that I actually started to see the connections and implications of my observations. As an observer in the studio, I would often make notes of my reflections as they occurred. Throughout this process, I thought I was thinking critically. But it wasn't until the second or third round of "reflections" when I made the connection between what I experienced in studio and the consequences for environmental justice did the real learning actually occur.

It is difficult for people to see the connection of environmental justice to their work.

I found that it is difficult to get people to realize the connections between "their" work and its impacts for environmental justice. Environmental justice (perhaps rightly so) is still viewed as a strictly environmental issue—it is a problem of poor air or water quality in a particular neighborhood. Only when the average "decision-maker" recognizes *all* the impacts of their decisions, will our cities become more environmentally just. An illustration of this problem arose in a discussion I had with a studio participant when I was first developing my thesis topic. I mentioned my interest in environmental justice especially as it related to transportation policy. He was surprised, for example, that a connection could be made between the provision of transportation infrastructure and environmental justice. He, at first, did not see the importance of the connection between mobility and access to resources. Although most people recognize the importance of justice, they have yet to understand how their policies can create disparate impact to a less-powerful group.

It is difficult to overcome inertia.

It is a well-documented fact that people resist change. My experience in the studio has only reinforced this notion. Even in a situation where many of the participants are strong

advocates of justice, and in an environment conducive to individual initiative and interest, there are still strong forces working against change. As I discussed previously in Chapter Three in the *individual initiative and common knowledge* section, there is a certain amount of inertia in practice. As our daily routines become tacit and almost habit-forming, it becomes more difficult to incorporate new issues or methods. In studio, for instance, I encountered much resistance to incorporating the social demographics information into our final report. Even after writing the sections for the final scenario analyses, they were left out of the final report and presentation because their format did not match the other sections. It was thought that the way the demographic information was presented was incongruent with the other sections.

Understand your client.

It is important to understand where your client is coming from. What are their particular interests and goals? What do they want from you? By understanding what pressures may be influencing your work, you can better judge what impacts those influences are having and what, therefore, must be done about it.

You never have enough time, until it is too late.

Time constraints and commitments influence the scope, quality, and thoroughness of one's work. Even with eleven students, two professors, several practitioners, and six hours of dedicated time a week, the studio still felt the pressures of time constraints. Another problem with respect to planning processes is that if you take too much time developing the plan or the set of scenarios, it will be too late. The problems will have either changed, become more complex, or gotten so bad that another plan will be necessary.

The Matrix model really works.

A matrix model like the "Zhang-Matrix model" used in our studio, accomplishes two goals at once. By breaking the group into sectors, the model helped the studio participants tackle a large and complex system that they had previously struggled with. By simultaneously maintaining the scenario teams intact, you solve the problem of breaking into sector teams in the first place—the formation of artificial boundaries that inhibit a cross-interdisciplinary perspective necessary for environmental justice.

Don't believe everything you read in a book (or report).

One piece of advice that this studio process served to reinforce is to not believe everything you find in writing. While so-called "facts" might be based on the best available data and consistent assumptions, they may still simply be the researcher's best *guess*. Decision-making processes are riddled with many of the same challenges—lack of time, incomplete data, overly complex problems, resistance to change, etc.—as was faced in the HK-PRD planning process. With so many challenges, I have learned to become skeptical of any study that claims overwhelming and conclusive evidence. I learned to be more critical of the process by which any "decision" was made.

LESSONS OTHERS LEARNED

One of the most gratifying experiences of my thesis process was helping others in my studio to learn by encouraging their own self-reflection on their practice. On more than a few instances, my colleagues came to me to let me know their own reflections from the studio. They would "confess" what they had learned, what problems they were having, or what changes they wanted to see in our work. One colleague, for example, discussed with me at

length about the transformation he had experienced with respect to his feelings about the environment. Before the studio field trip, he said, he didn't really consider the environment as a very important issue for the PRD. Currently, however, he found environmental issues to be central to the region's future. He attributed his new perspective to contact with other students knowledgeable about environmental issues and the experience of going into the community during the studio field trip.

Another way that I think my thesis might have influenced others in the studio is by getting them to think deeper about justice. Just the mere fact that other students knew that I was concerned about justice kept the topic on the table for discussion. Although it might not have had any actual impact on our final product, it served to at least make people aware that environmental justice is an issue worthy of concern.

DRAWBACKS AND FUTURE DIRECTIONS

Looking back on the experience, there are a few changes I would make given the opportunity to do it all over again. The biggest drawback of my thesis is that I had to complete my analysis before the official end of the studio. Ideally, the analysis wouldn't be done until after the completion of the case study. The administrative constraints under which I write this thesis, however, do not allow such a timeframe.

In hindsight, it would have been helpful to my analysis had I been able to conduct "exit interviews" with studio participants. These interviews would give me the opportunity to ask other participants about their own reflections of the studio. It would be valuable to hear from all my colleagues what they felt about the studio and to quiz them about what they learned from the process. Did their attitudes change from the start of the studio? What, if anything, do they wish could be changed? What was their most important learning

"moment"? Do they think that the experience has prepared them for "real" practice? In addition, I wish I had started writing earlier. As I mentioned previously, the bulk of my "learning" took place during the writing process. With more time, I may have been able to take my reflections further.

Another difficulty I encountered was the challenge of removing myself while in the midst of the studio environment, so that I could stop, take a step back, and reflect on what was going on. While participating in the studio added a lot to my experience, I wonder if I could have been more effective as just an observer to the studio. I would no longer find it difficult to step back from the process.

IMPLICATIONS FOR ENVIRONMENTAL JUSTICE

The most important reflections from the Hong Kong/Pearl River Delta Planning studio that I identified for environmental justice can be summarized into four main points. The first is that the demands of getting something done produced by time constraints, is at odds with the demands of deliberation and inquiry needed to make connections relevant to the problem. Secondly, the need for clarity and direction that necessitated a complex organizational structure creates commitments that were at odds with environmental justice. Next is that the lack of data makes it difficult to illustrate or prove claims about environmental justice. Finally, perhaps the biggest challenge is that we lack any models of practice from which to draw.

Considering these reflections, I am compelled to ask the question—Is regional planning even a good place to address the problems of environmental justice? Perhaps the scope is too large for environmental justice. The problem, however, is that if planners don't tackle the issue, then who will? We must address the problems in practice that produce the

outcomes we observe. It looks more like environmental justice is just the "name" given to the outcomes of "bad" planning decisions and that the current environmental justice movement exists to provide a framework with which to tackle the problems. As the problems associated with environmental justice begin looking like characteristic planning issues, then the more reason there is to understand the challenges faced by practitioners concerned with the problems of environmental justice.

REFERENCES

Bullard, Robert D. ed. *Unequal Protection. Environmental Justice and Communities of Color.* San Francisco: Sierra Club Books, 1994.

Bullard, Robert D. and Glenn S. Johnson, Eds. *Just Transportation. Dismantling Race and Class Barriers to Mobility.* Gabriola Island, BC and Stony Creek, CT: New Society Publishers, 1997.

Forester, John. *Planning in the Face of Power.* University of California Press, 1989.

Forkenbrock, David J. And Schweitzer, Lisa A. "Environmental Justice in Transportation Planning." *Journal of the American Planning Association.* Vol. 65 (1) pp. 96-111, Winter, 1999.

Geiser, Ken and Gerry Waneck. "PCBs and Warren County." *Science for the People*, July-August 1983: 13-17.

Karliner, Joshua, Alba Morales, and Dara O'Rourke. "The Barons of Bromides—The Corporate Forces behind Toxic Poisoning & Ozone Depletion" The Ecologist. 1997, Vol. 27 (3), 90-98.

Lazarus, Richard. "Pursuing 'Environmental Justice': the Distributional Effects of Environmental Protection" Northwestern University Law Review, Vol. 87 (3), p. 787-857, 1993.

McCall, George J. *Issues in participant observation; a text and reader.* Reading Mass. Addison-Wesley Pub. Co., 1969.

Ng, Mee Kam and Wing-shing Tang. The Pearl River Delta Urban System Plan. An Analysis. Hong Kong Institute of Asia-Pacific Studies. Shatin, New Territories Hong Kong: The Chinese University of Hong Kong, December 1997.

Oakes, John M., Douglas L. Anderson, and Andy Anderson. "A Longitudinal Analysis of Environmental Equity in Communities with Hazardous Waste Facilities." *Social Science Research*, Vol. 25, p. 125-148, 1996.

Olshansky, Barbara J. Ch. 20: "Controlling Exposures in the Workplace" *The Law of Environmental Justice.* American Bar Association: 662-692.

Pullido, Laura. "A Critical Review of the Methodology of Environmental Racism Research." Antipode. 1996, Vol. 28 (2), 142-159.

Rigano, Donna and John Edwards. "Incorporating reflection into work practice: A Case Study." Management Learning. Vol. 29 (4) pp. 431-446, December, 1998.

Schön, Donald A. The Design Studio: An Exploration of its Traditions and Potentials. London: RIBA Publications Limited, 1985.

Schön, Donald A. *Educating the Reflective Practitioner.* San Francisco: Jossey-Bass Publishers, 1987.

Schön, Donald A. *The reflective practitioner: how professionals think in action.* New York: Basic Books, c1983.

Schön, Doland A. ed. The Reflective Turn: Case Studies In and On Educational Practice. New York: Teachers College Press, 1991.

Yeung, Yue-man. "Planning for Pearl City: Hong Kong's future, 1997 and beyond." Cities. Vol. 14. (5) pp. 249-256, 1997.

APPENDIX

Appendix A: Field Trip Itinerary

January 10:
Arrive Hong Kong

January 11:
Tour Chi Lin Monastery
Visit Zuni Icosahedron—Hong Kong artists collective
Meeting at Hong Kong Government's Planning Department
Dinner with sponsors at Furama Hotel, La Ronda Restaurant

January 12:
Depart for Shenzhen
Meeting with Professor Sun at Shenzhen Planning Ex hibition Hall
Tour Varitronix (electronics manufacturing facility) in Sha Wan
Arrive Guangzhou

January 13:
Meet with Ms. Ma Xiu-ling of the South China Environmental Science Research Institute
Visit Department of Planning, Zhongshan University at Gua ngzhou

January 14:
Depart Guangzhou
Tour Mattel Diecast Factory
Arrive Foshan, tour city and meet with mayor at ancestral hall
Arrive Gaoming, Esquel's (textile factory) staff quarter

January 15:
Tour Esquel facility
Depart for Zhongshan
Visit Urban Planning Institute Sustainable City
Depart for Hong Kong via Zhuhai ferry

APPENDIX B: SEVENTEEN PRINCIPLES OF ENVIRONMENTAL JUSTICE

Principles of Environmental Justice as drafted at the First National People of Color Environmental Leadership Summit in Washington D.C., October 1991.[41]

Environmental Justice:

- Affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction.
- Demands that public policy be based on mutual respect and justice for all people, free from any form of discrimination or bias.
- Mandates the right to ethical, balanced and responsible uses of land and renewable resources in the interest of sustainable planet for humans and other living things.
- Calls for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes and poisons and nuclear testing that threatens the fundamental right to clean air, land, water and food.
- Affirms the fundamental right to political, economic cultural and environmental self-determination of all peoples.
- Demands the cessation of the production of all toxins, hazardous wastes, and radioactive materials, and that all past and current producers be held strictly accountable to the people for detoxification and the containment at the point of production.
- Demands the right to participate as equal partners at every level of decision-making including needs assessment, planning, implementation, enforcement and evaluation.
- Affirms the right of all workers to a safe and healthy work environment, without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.
- Protects the right of victims of environmental injustice to receive full compensation and reparations for damages as well as quality health care.
- Considers governmental acts of environmental injustice a violation of international law, the Universal Declaration On Human Rights, and the United Nations Convention in Genocide.
- Must recognize a special legal and natural relationship of Native Peoples of the US government through treaties, agreements, compacts, and covenants affirming sovereignty and self-determination.
- Affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of our communities, and providing fair access for all to the full range of resources.
- Calls for the strict enforcement of principles of informed consent, and a halt to the testing of experimental reproductive and medical procedures and vaccinations on people of color.
- Opposes the destructive operations of multi-national corporations.

---

[41] Excerpted from Karl Grossman's "The People of Color Environmental Summit" *Unequal Protection*, Robert Bullard, ed., 1994.

- Opposes military occupations, repression and exploitation of lands, peoples and cultures, and other life forms.
- Calls for the education of present and future generations which emphasizes social and environmental issues, based on our experience and an appreciation of our diverse cultural perspectives.
- Requires that we, as individuals, make personal and consumer choices to consume as little of Mother Earth's resources and to produce as little waste as possible; and make the conscious decision to challenge and reprioritize our lifestyles to insure the health of the natural world for present and future generation.